

## SC-2 SUPERVISORY CONTROL SYSTEM

### SIGNALING CIRCUIT

#### MAINTENANCE

#### 1.00 INTRODUCTION

1.01 This circuit provides a means to transmit and receive signals. Two basic circuit arrangements are provided for this service, one for use in main stations and one for use in satellite or monitor stations.

1.02 Since telegraph signaling is used on these circuits, the facility used shall tolerate 25 per cent distortion.

1.03 With this arrangement, connection to the loop is made through a 63C1 loop switchboard. The signaling circuit may be disconnected from the telegraph loop and the loop may be tested or the station tested by use of the 63C1 loop switchboard.

#### 2.00 MAIN STATION CIRCUIT

2.01 The main station circuit is a plug-in unit. It contains a 10-cycle generator used to regulate the transmission of pulse length code signals at a speed of approximately 10 cps.

2.02 This unit also receives both short (100 millisecond) and long (400 millisecond) reply signals or alarm signals from the satellites or monitor station and advises the main station of their occurrence.

2.03 Orders and inquiries are transmitted to the satellite or monitor station in the form of pulse length codes. A pulse length code is composed of a prepared pulse of 150 milliseconds (msec) duration followed by five pulses for each digit of the code. If single-frequency, tone-off signaling is used, a pulse elongator circuit is added to lengthen the prepared pulse to 220 msec duration.

Two of these five pulses are long (150 msec) and the remaining three are short (50 msec). The codes generated may be either two or three digits.

#### 3.00 SATELLITE OR MONITOR STATION CIRCUIT

3.01 This signal circuit is a plug-in unit. When used in a satellite station, this circuit is required to receive pulse length code and transmit reply or alarm signals. This unit contains a timer used to measure the length of each received pulse, of pulse length code.

3.02 When used in a monitor station, this circuit is required to receive pulse length code and reply or alarm signals. It is also required to transmit reply or alarm signals. In this application the timer must also measure the length of each received reply or alarm pulse.

#### 4.00 TESTING

4.01 The following testing equipment is required in addition to that specified in other practices covering maintenance of relays.

1 — No. 5 Timing Test Set per J24753A

1 — J94723A Pulse Checking Test Set for testing at all locations

2 — KS-8512, L21A 90-ohm Resistors for main station

3 — 437QA, 4.28-mf Capacitors for satellite and monitor

4.02 All relays shall meet requirements as specified in circuit requirement tables.

**SECTION C71.808**

**5.00 REFERENCES**

Sections covering the component parts of the SC-2 supervisory control system are listed below for easy reference.

A301.808 — 105D Power Plant

A702.666 — No. 5 Timing Test Set

*Wire Spring Relays*

A461.014 — Maintenance and Adjustments

A502.031 — Blocking and Insulating

A502.036 — Test Connections

A503.605 — Contact Cleaning

A504.101 — Contact Cleaning

A507.211 — Piece Part and Replacement

A804.007.2 — Winding and Spring Designation

A804.101 — Educational Information

B464.014 — Maintenance and Adjustments

B490.636 — Reference for B461.014

B503.605 — Contact Cleaning